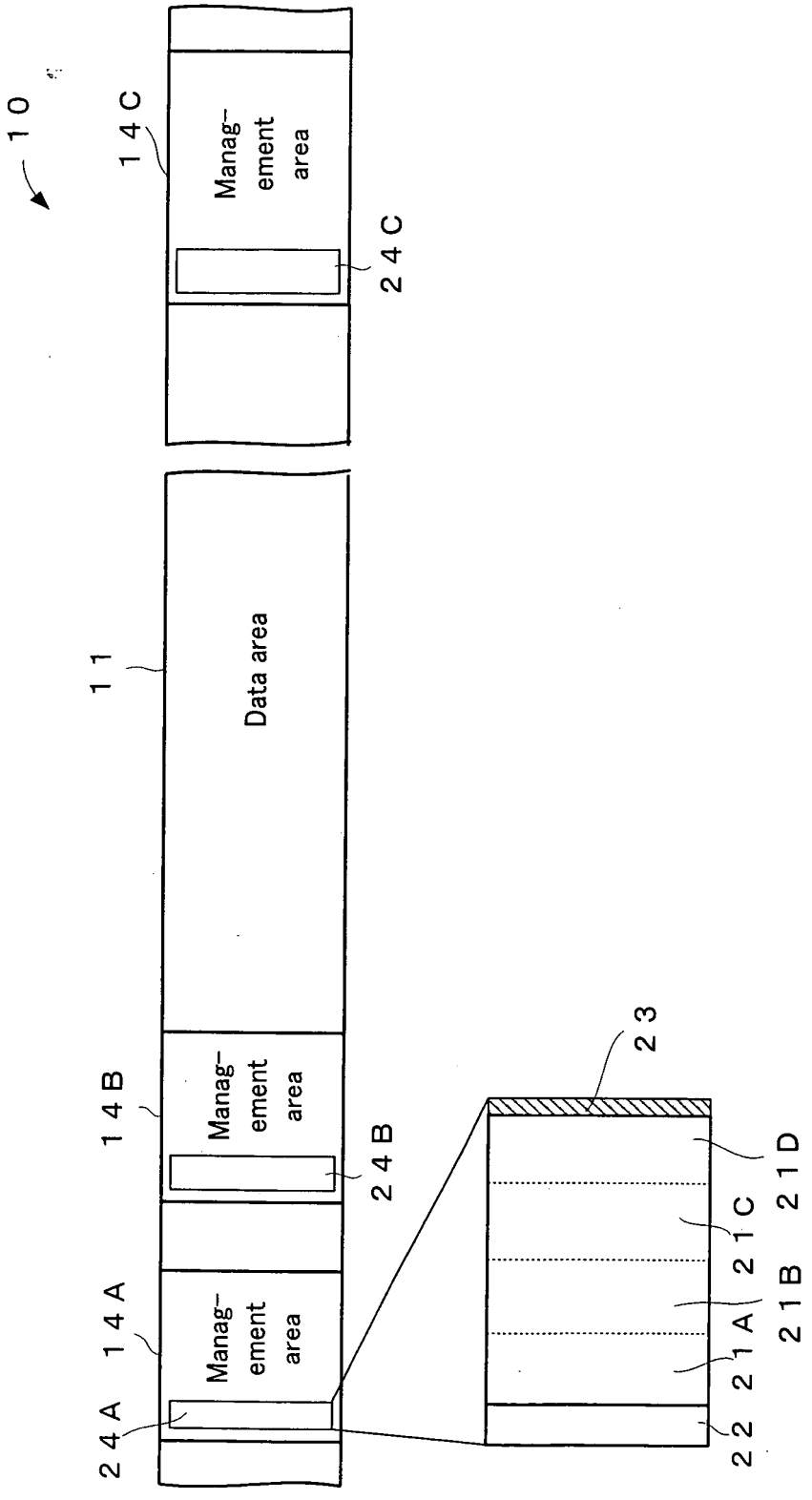
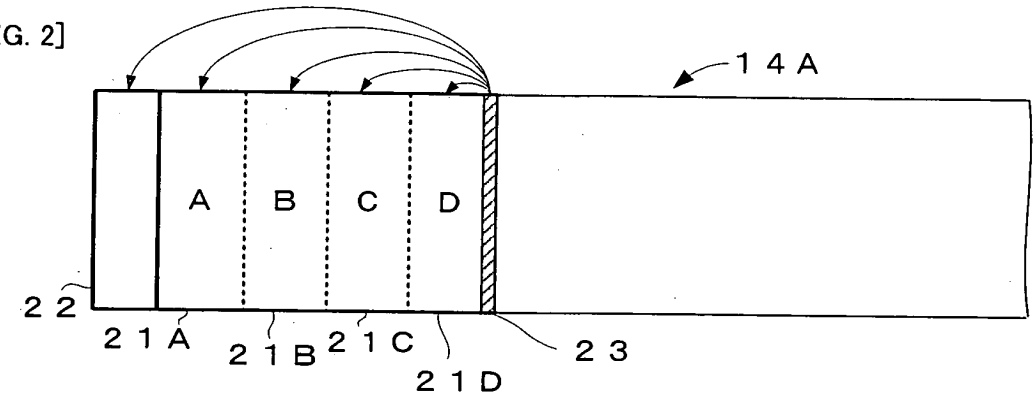
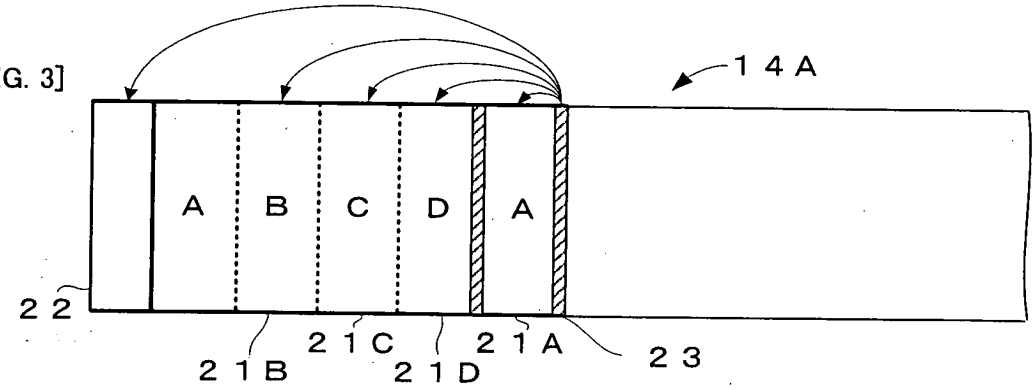
[FIG. 1]


10
14C
Manag-
ement
area
24C
11
Data area
14B
Manag-
ement
area
24B
14A
Manag-
ement
area
24A
23
21D
21C
21B
21A
22

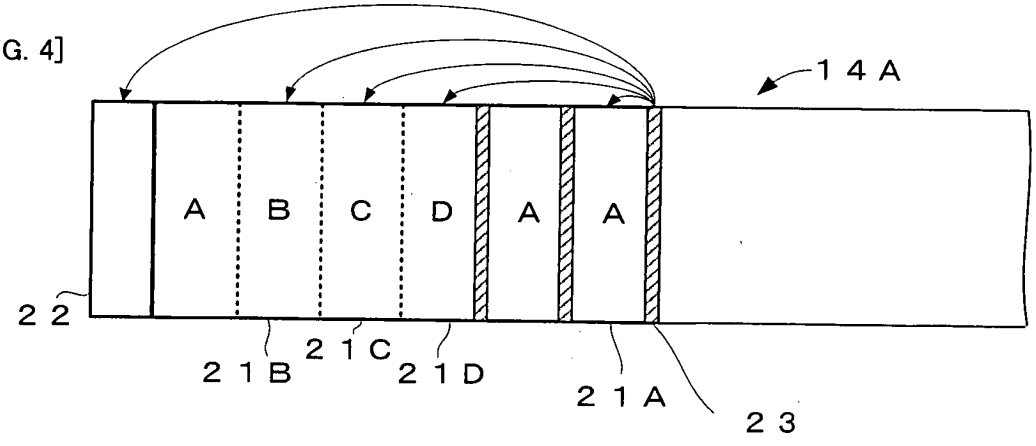
[FIG. 2]



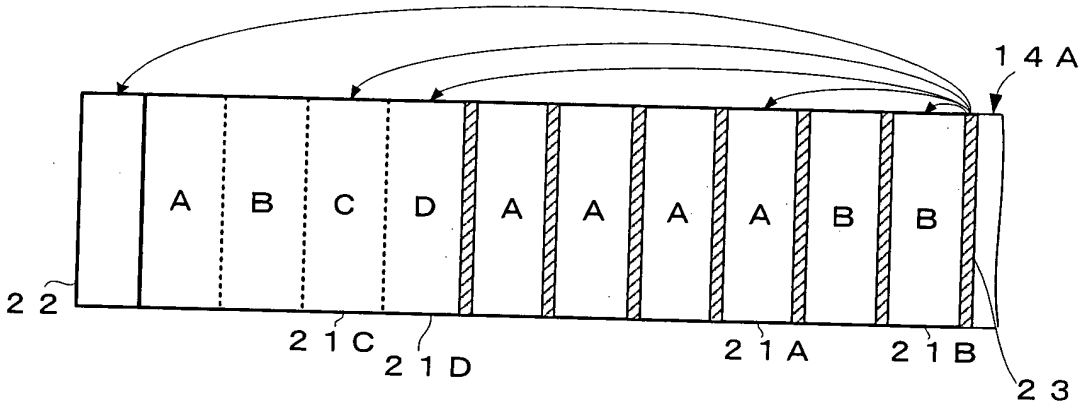
[FIG. 3]



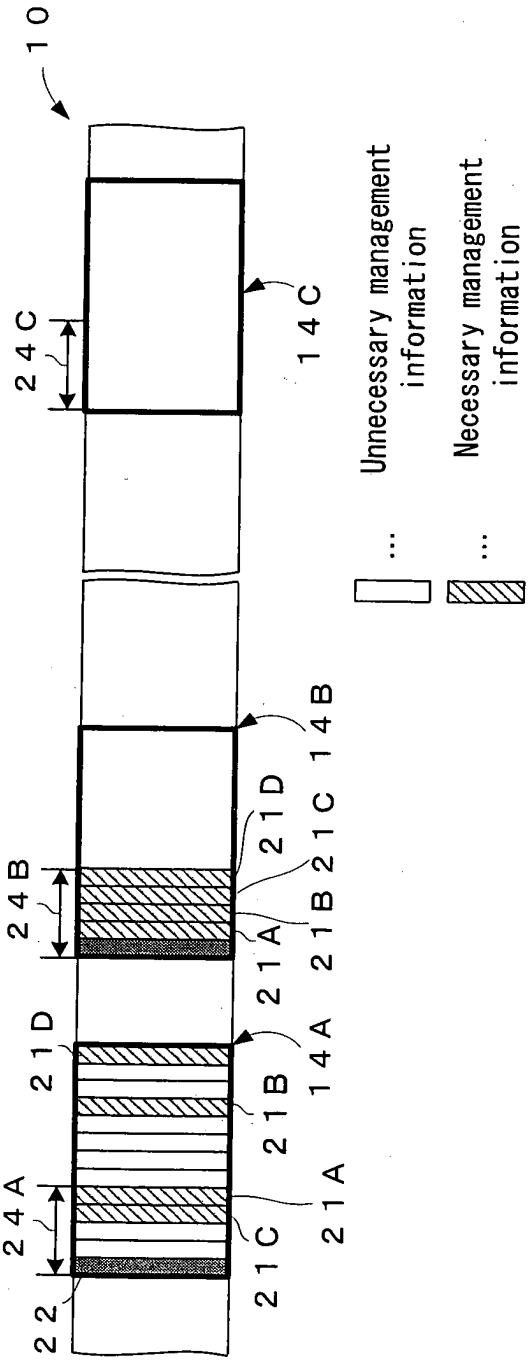
[FIG. 4]



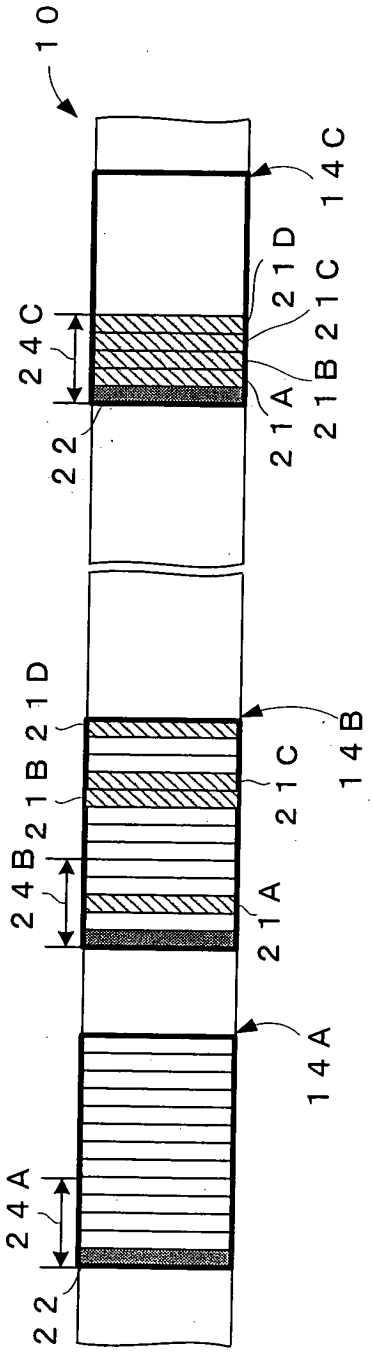
[FIG. 5]



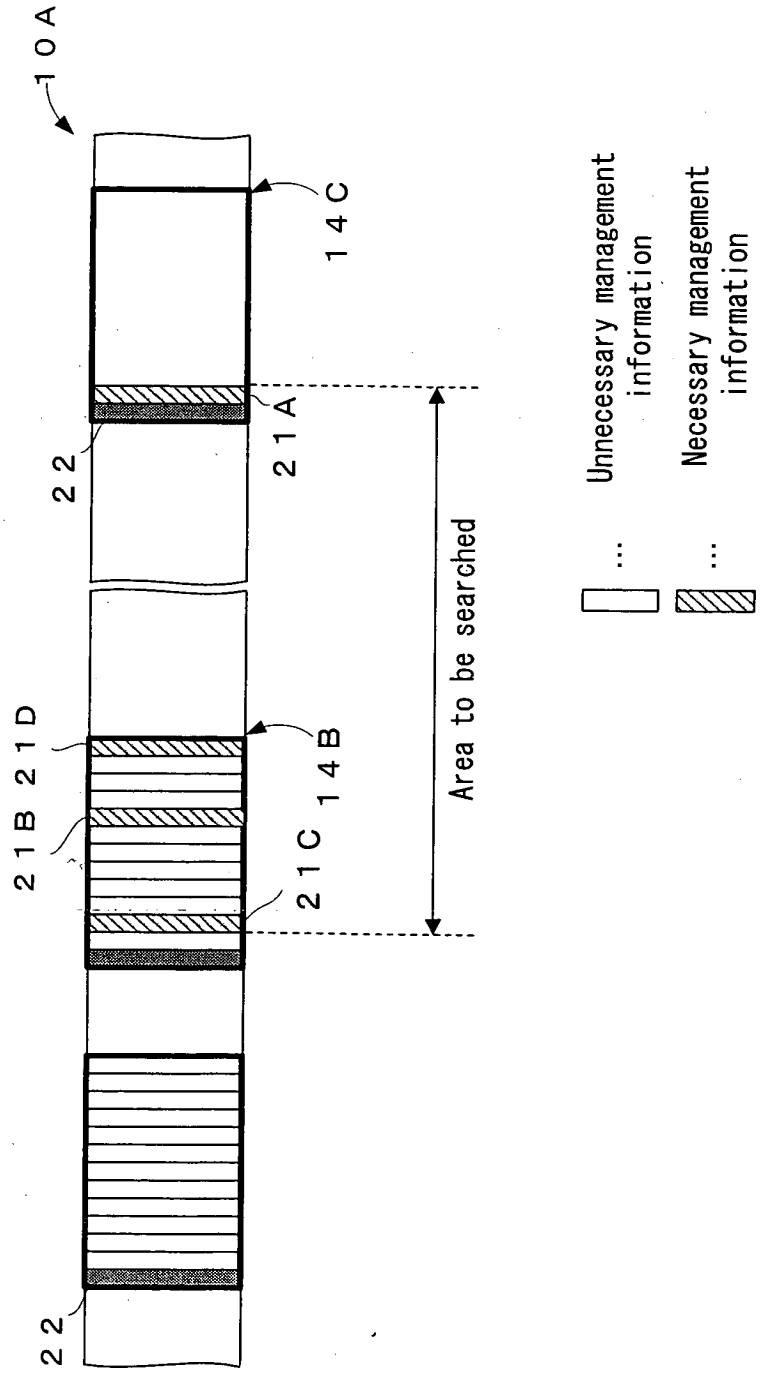
[FIG. 6]


10
24C
14C
Unnecessary management information
Necessary management information
24B
14B
21D
21C
21B
21A
21D
14A
21B
21A
24A
21C
22

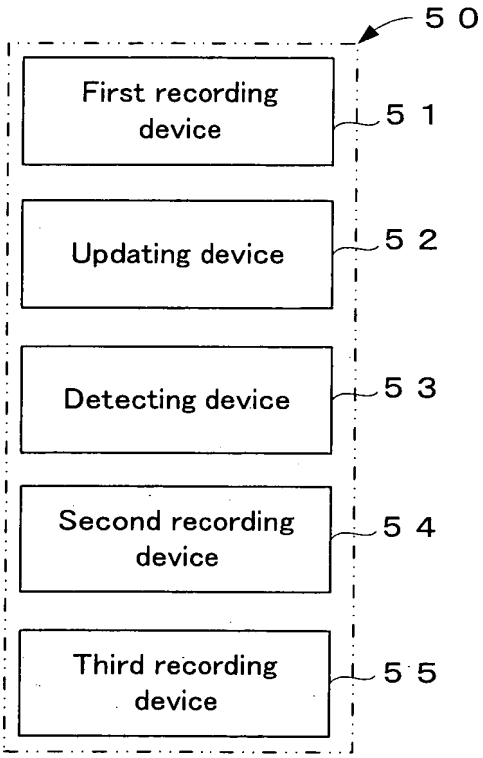
[FIG. 7]



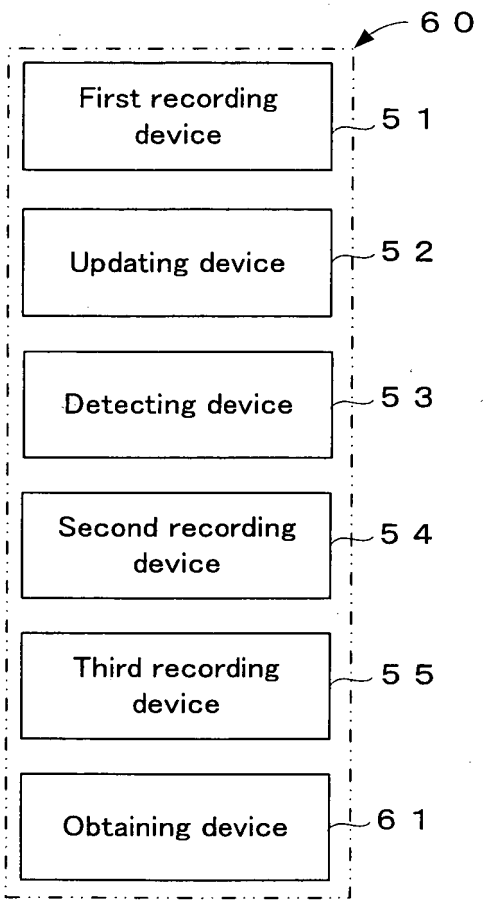
[FIG. 8]


10A
14C
21A
22
21B
21D
14B
21C
Area to be searched
22
Unnecessary management information
Necessary management information

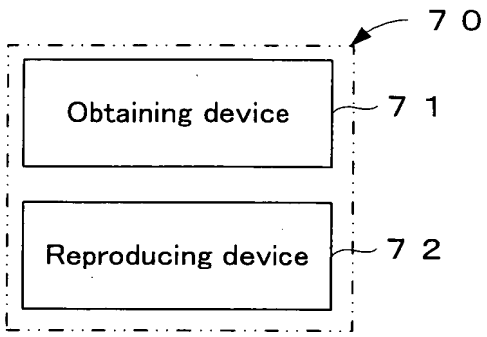
[FIG. 9]


50
First recording device
51
Updating device
52
Detecting device
53
Second recording device
54
Third recording device
55

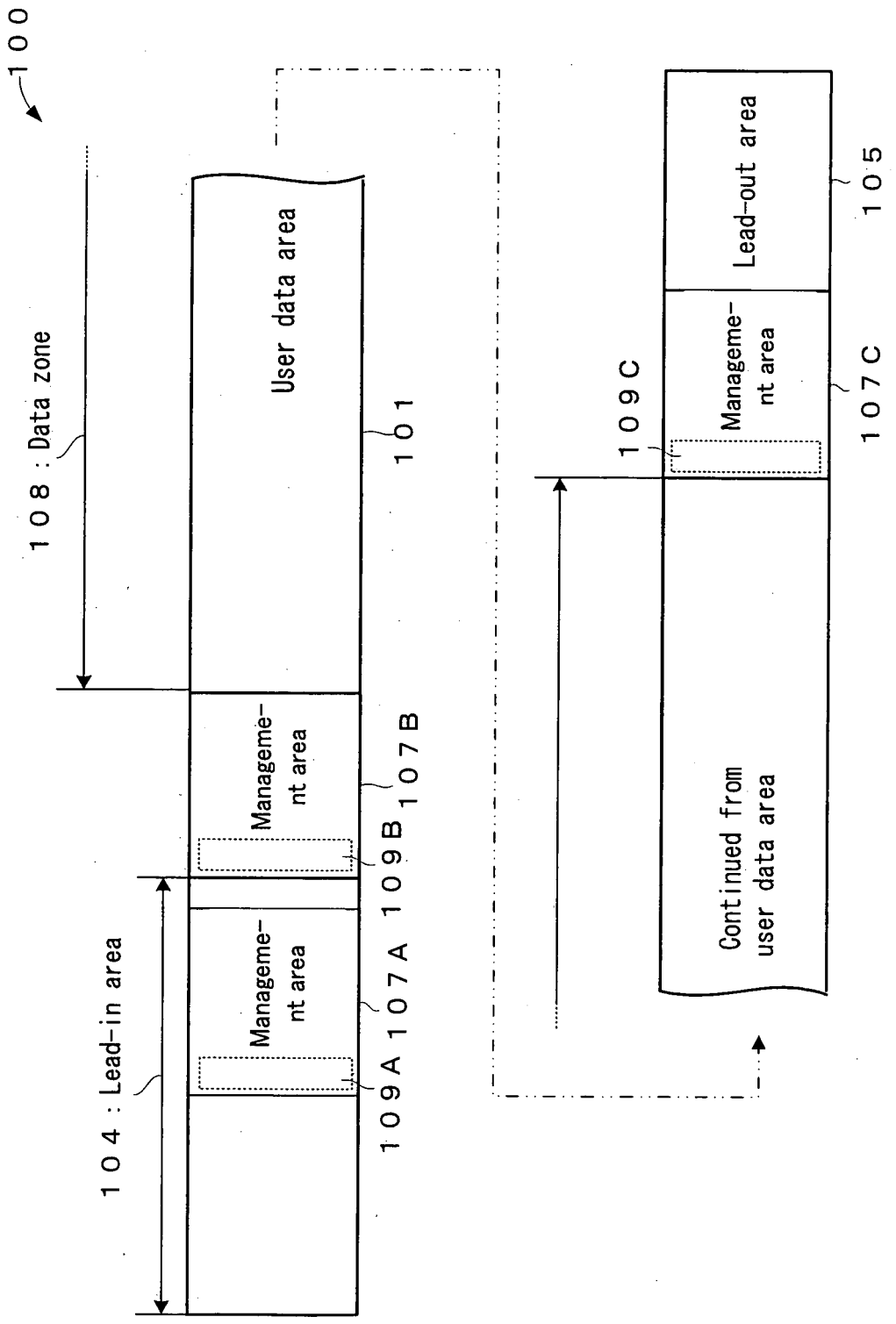
[FIG. 10]


60
First recording device
51
Updating device
52
Detecting device
53
Second recording device
54
Third recording device
55
Obtaining device
61

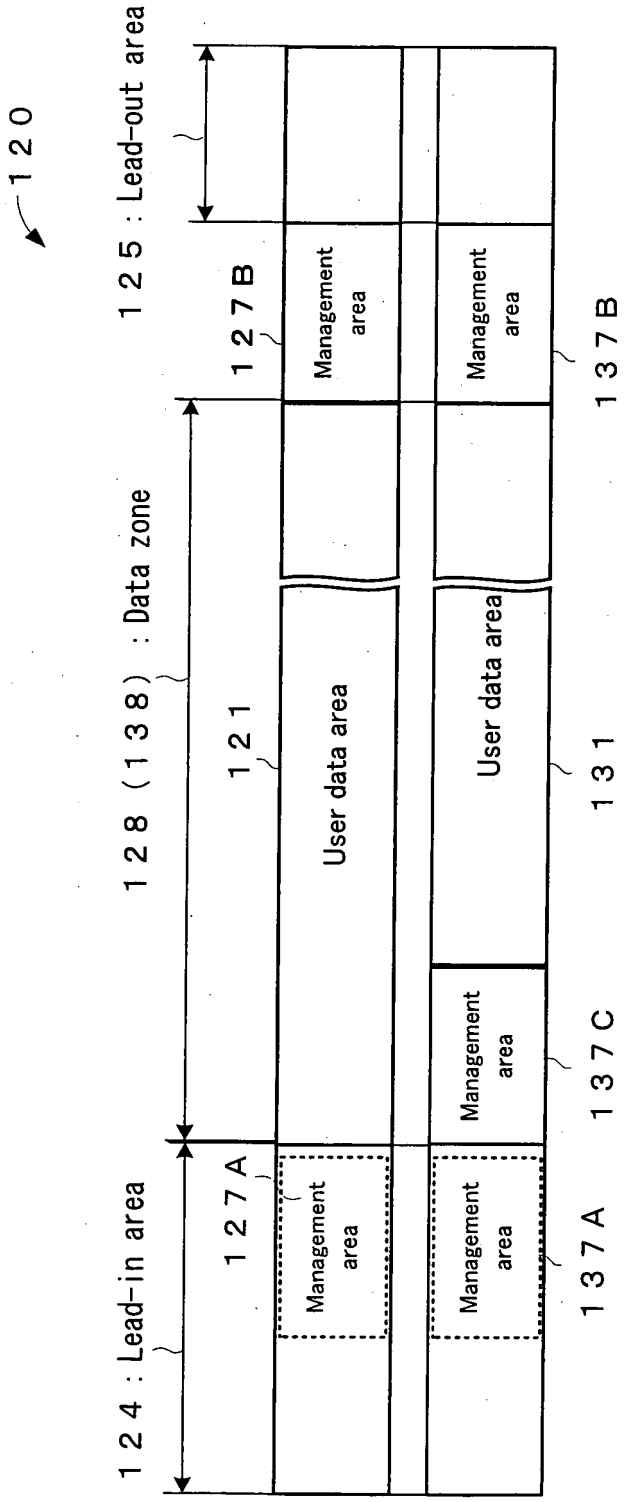
[FIG. 11]



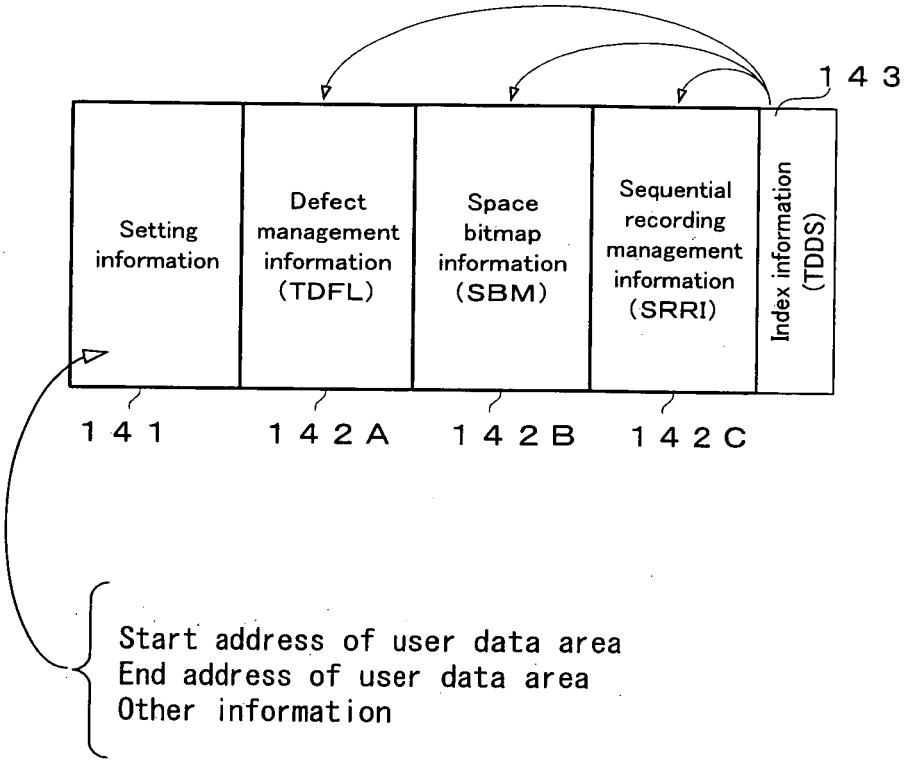
[FIG. 12]


100
108 : Data zone
User data area
101
Lead-out area
105
Manageme-
nt area
107C
109C
Manageme-
nt area
107B
109B
Manageme-
nt area
107A
109A
104 : Lead-in area
Continued from
user data area

[FIG. 13]


120
125 : Lead-out area
127B
Management area
137B
Management area
128 (138) : Data zone
121
User data area
131
User data area
137C
Management area
124 : Lead-in area
127A
Management area
137A
Management area

[FIG. 14]

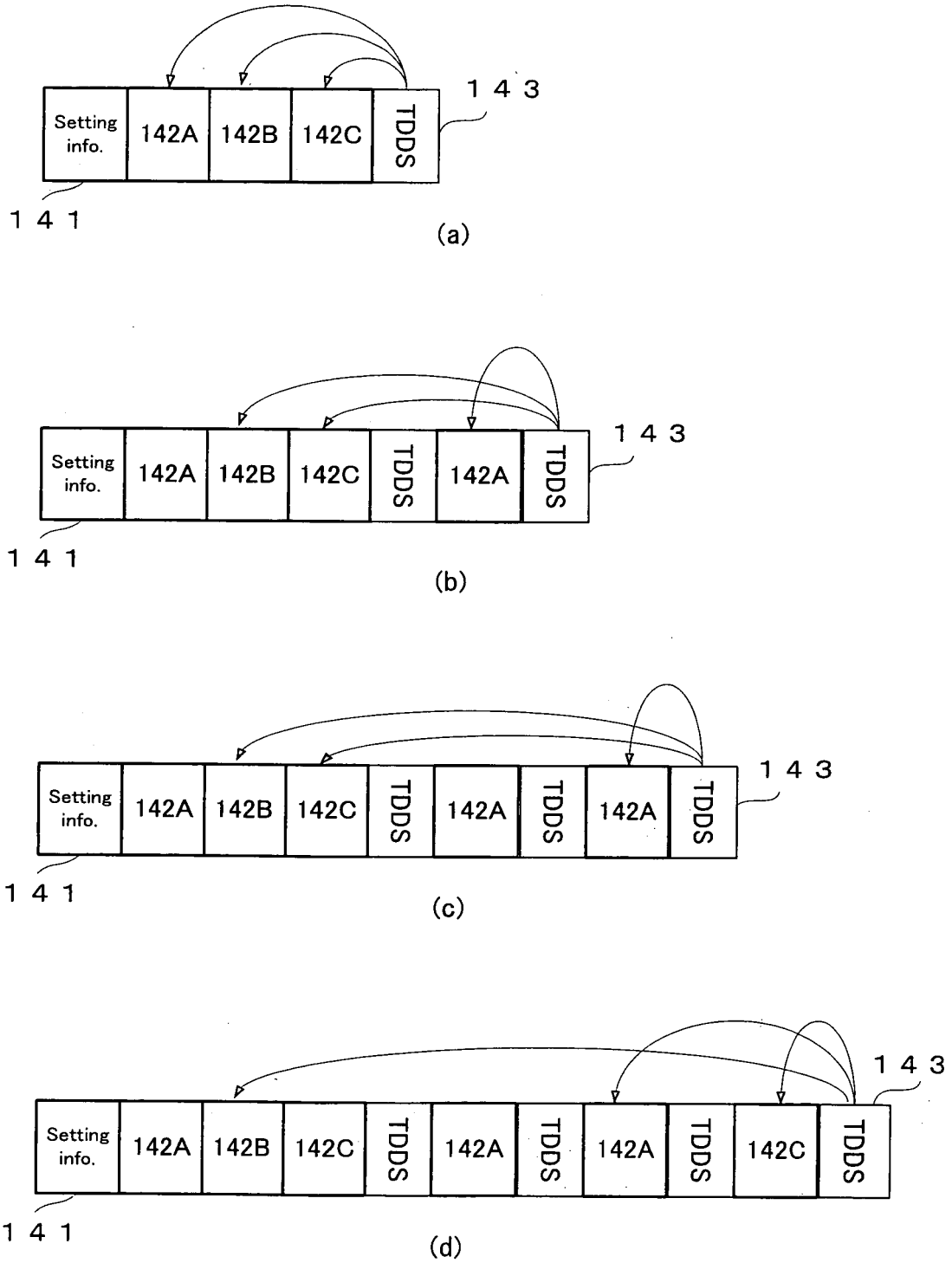


[FIG. 15]

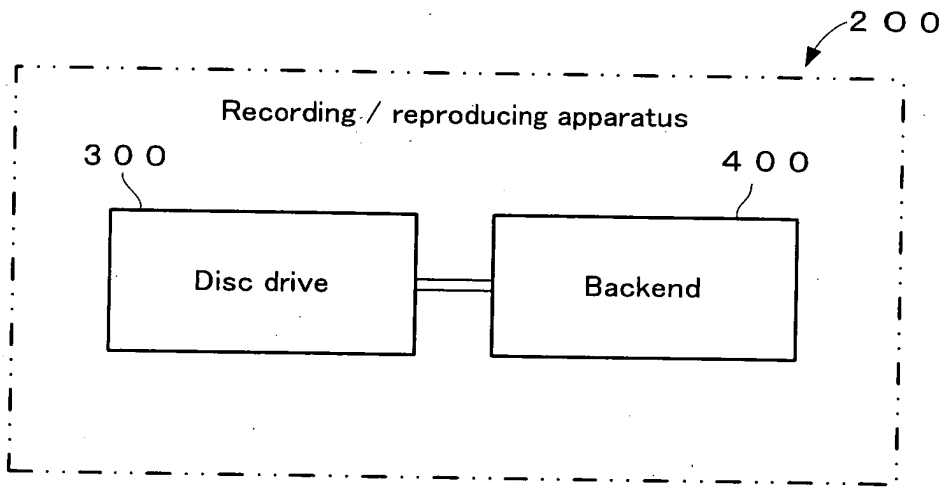
142A

Defect address	Spare address	Other information
Address aaaa	Address gggg	
Address bbbb	Address kkkk	
Address cccc	Address mmmm	
Address dddd	Address nnnn	
⋮	⋮	

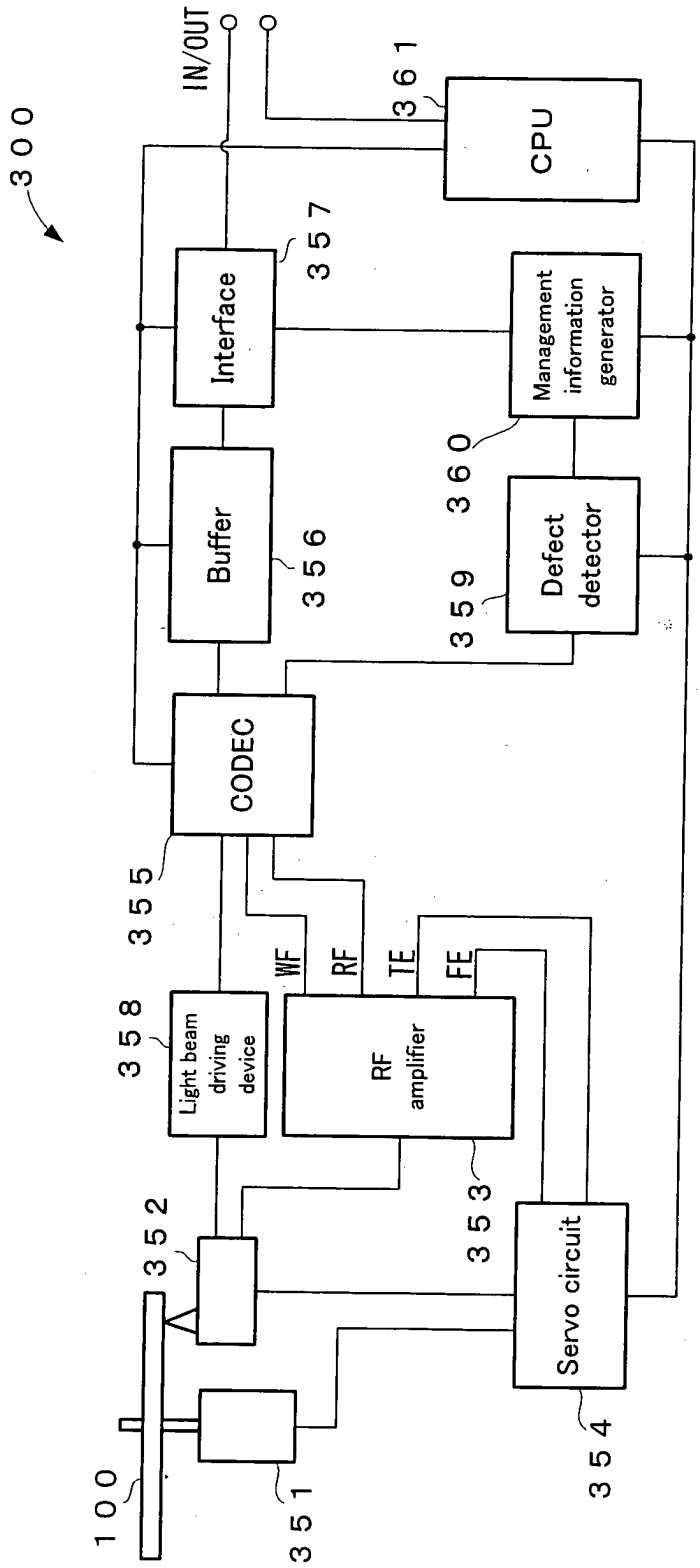
[FIG. 16]


Setting info.
142A
142B
142C
TDDS
143
141
(a)
Setting info.
142A
142B
142C
TDDS
142A
TDDS
143
141
(b)
Setting info.
142A
142B
142C
TDDS
142A
TDDS
142A
TDDS
143
141
(c)
Setting info.
142A
142B
142C
TDDS
142A
TDDS
142A
TDDS
142C
TDDS
143
141
(d)

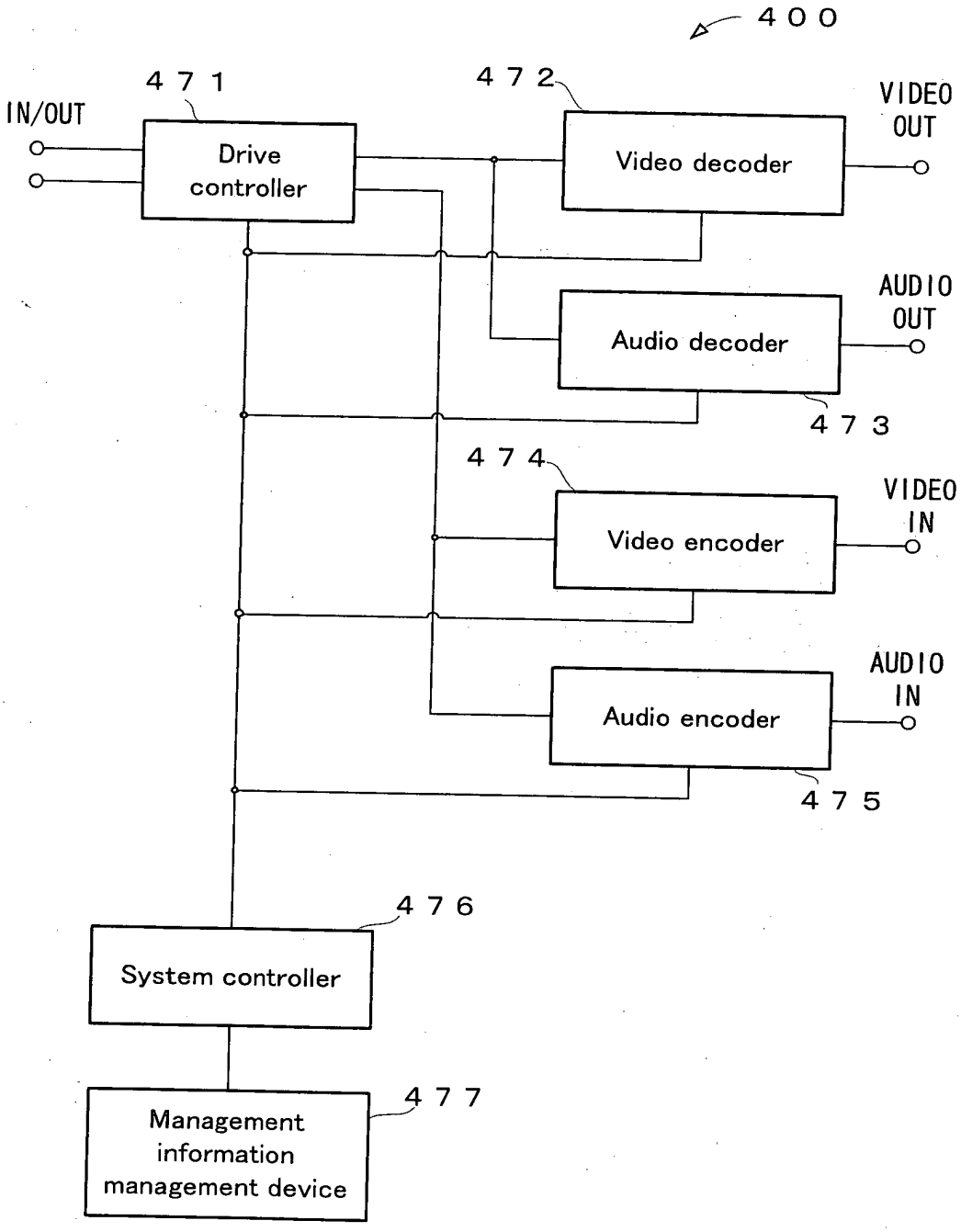
[FIG. 17]


200
Recording / reproducing apparatus
300
400
Disc drive
Backend

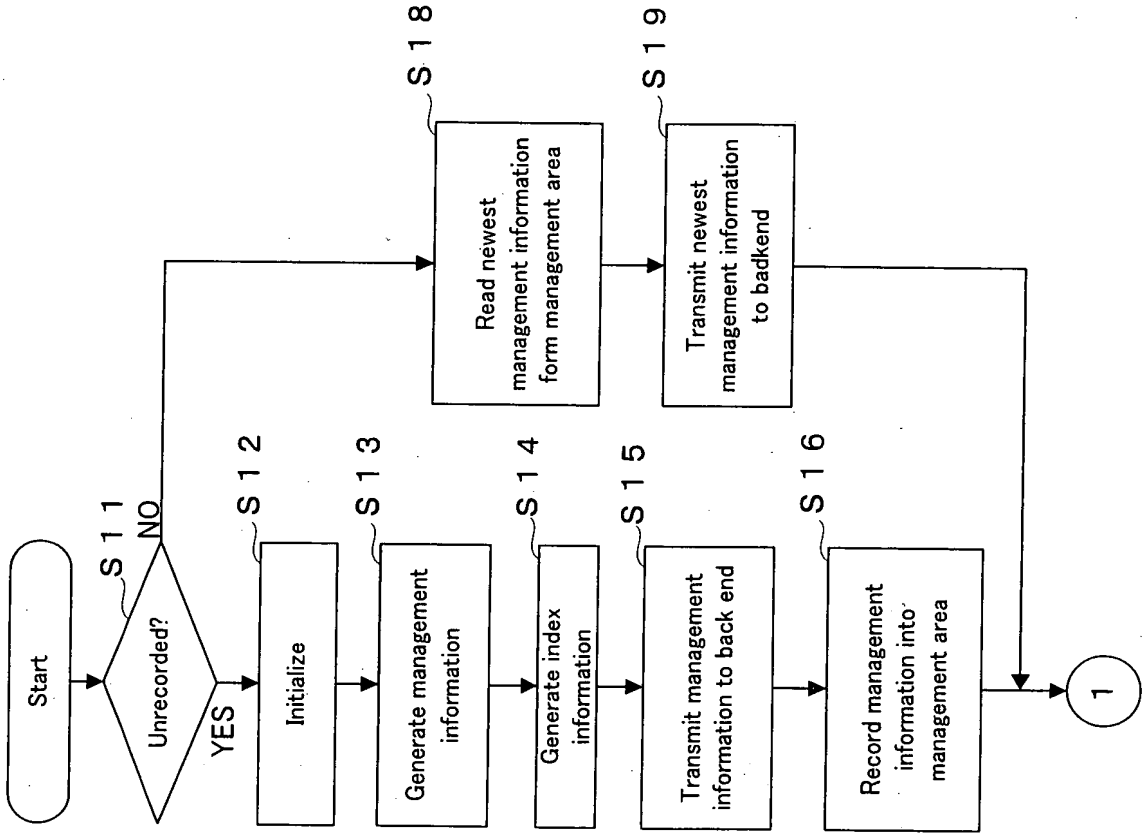
[FIG. 18]


300
IN/OUT
361
CPU
357
Interface
Management information generator
360
Buffer
356
Defect detector
359
CODEC
355
WF
RF
TE
FE
358
Light beam driving device
RF amplifier
353
352
Servo circuit
354
351
100

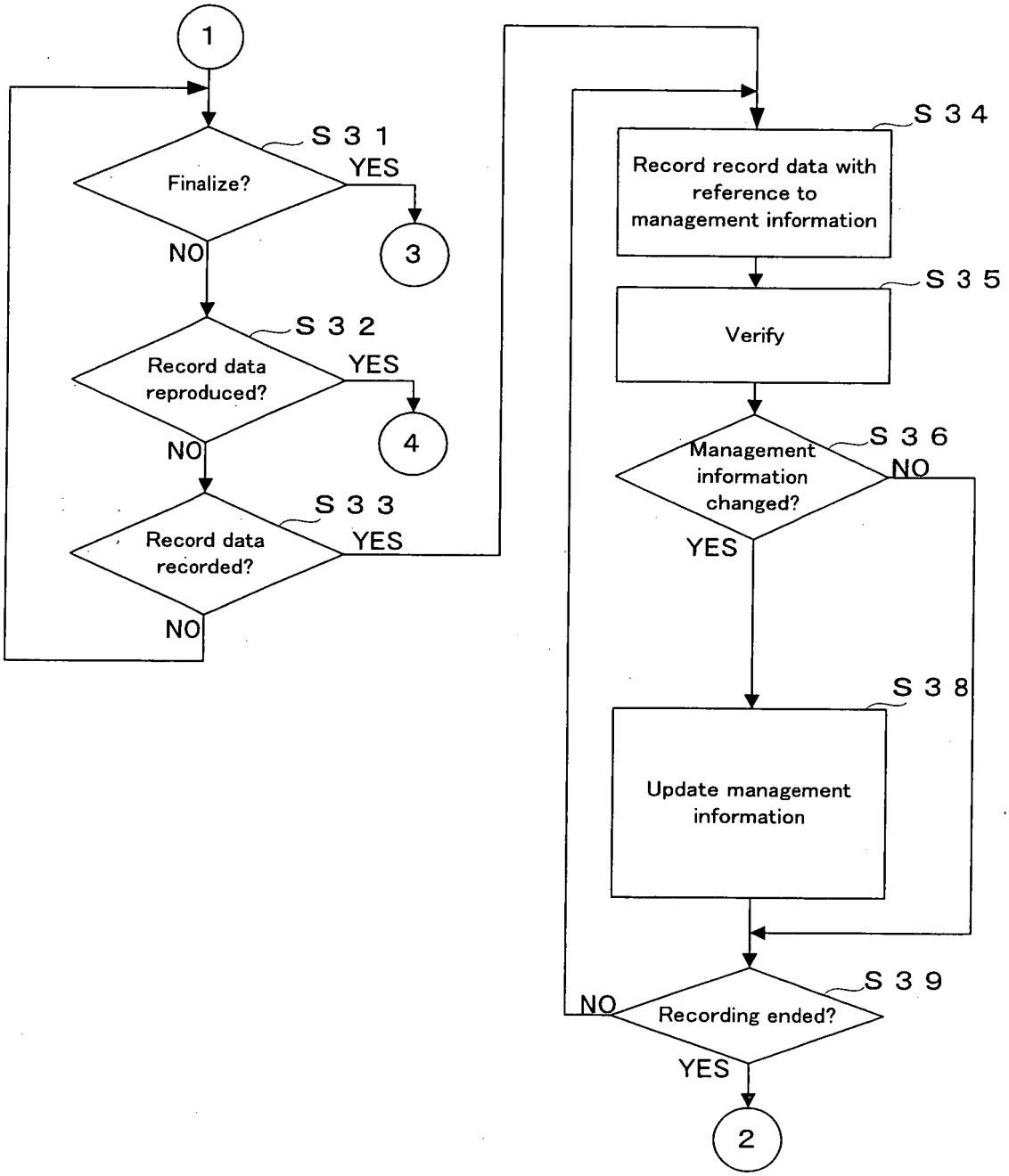
[FIG. 19]


400
471
IN/OUT
Drive controller
472
Video decoder
VIDEO OUT
AUDIO OUT
Audio decoder
473
474
Video encoder
VIDEO IN
AUDIO IN
Audio encoder
475
476
System controller
477
Management information management device

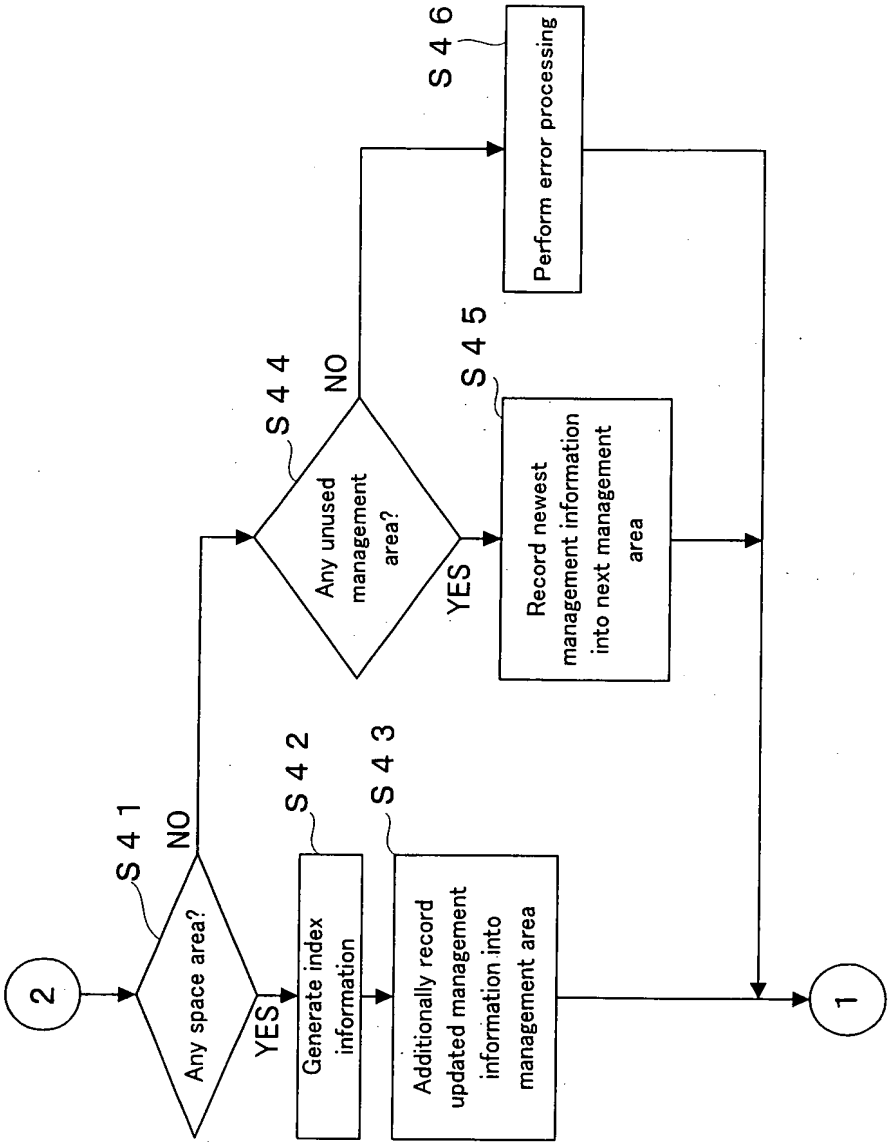
[FIG. 20]


Start
Unrecorded?
S11
NO
YES
Initialize
S12
Generate management information
S13
Generate index information
S14
Transmit management information to back end
S15
Record management information into management area
S16
Read newest management information form management area
S18
Transmit newest management information to badkend
S19
1

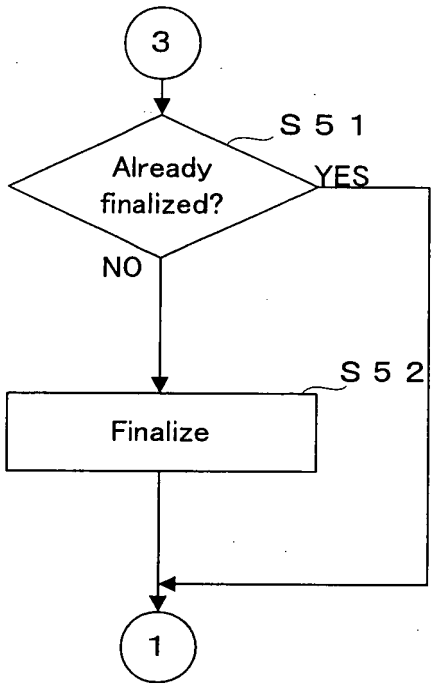
[FIG. 21]


1
S 3 1
Finalize?
YES
NO
3
S 3 2
Record data reproduced?
YES
NO
4
S 3 3
Record data recorded?
YES
NO
S 3 4
Record record data with reference to management information
S 3 5
Verify
S 3 6
Management information changed?
NO
YES
S 3 8
Update management information
S 3 9
NO
Recording ended?
YES
2

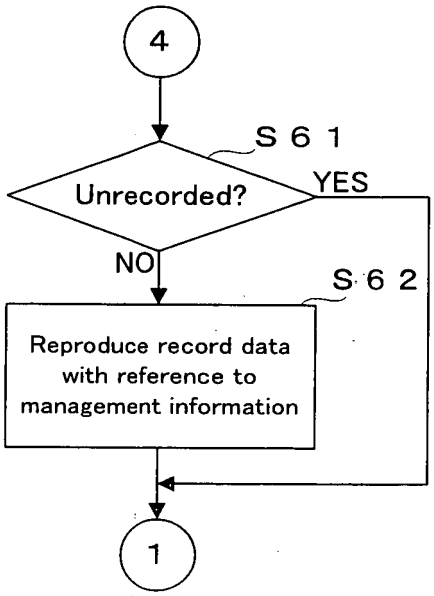
[FIG. 22]


2
S41
Any space area?
NO
YES
S42
Generate index information
S43
Additionally record updated management information into management area
S44
Any unused management area?
NO
YES
S45
Record newest management information into next management area
S46
Perform error processing
1

[FIG. 23]


3
S 5 1
Already finalized?
YES
NO
S 5 2
Finalize
1

[FIG. 24]


4
S 6 1
Unrecorded?
YES
NO
S 6 2
Reproduce record data with reference to management information
1